

Service Manual

 **PIONEER®**



STEREO TURNTABLE

PL-300 PL-300X

KUT, KCT

KU

For descriptions and adjustment methods of the D.D. motor and the mechanism employed in this model, refer to the Supplementary Service Manual (ART-467) for the PL-200, PL-255, PL-300, and PL-400 models.

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<ART-439-0>

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1. SPECIFICATIONS

Motor and Turntable

| | |
|-----------------------|---|
| Drive System | Direct-drive |
| Motor | Quartz PLL Hall motor |
| Turntable Platter | 310mm diam. aluminum alloy die-cast |
| Moment of Inertia | 180kg-cm ² (including platter mat) |
| Speeds | 33-1/3 and 45rpm |
| Wow and Flutter | Less than 0.025% (WRMS) |
| Signal-to-Noise Ratio | More than 75dB (DIN-B) (with Pioneer cartridge model PC-135) |

Rotational Characteristics

| | |
|-----------------|--|
| Build-up Time | Within 120° rotation at 33-1/3rpm |
| Speed Deviation | Less than 0.002% |
| Speed Drift | Less than 0.00008%/h at 33-1/3rpm Less than 0.00003%/degree temp. change at 33-1/3rpm |

Tonearm

| | |
|-------------------------|--|
| Type | Static-balance type, S-shaped pipe arm |
| Effective Arm Length | 221mm |
| Overhang | 15.5mm |
| Usable Cartridge Weight | 4g (min.) to 9g (max.) |

Subfunctions

Auto return mechanism, Anti-skating force control, Stylus pressure direct-readout counterweight, Cueing device, Strobe light, Free stop hinges

Semiconductors

| | |
|-----|---|
| ICs | 3 |
|-----|---|

| | |
|---------------|---|
| Transistors | 3 |
| Diodes | 6 |
| Hall Elements | 3 |

Miscellaneous

| | |
|--------------------|--|
| Power Requirements | AC120V, 50, 60Hz |
| Power Consumption | .8W |
| Dimensions | 420(W) x 96(H) x 365(D)mm 16-1/2(W) x 3-13/16(H) x 14-3/8(D)in. |
| Weight | .65kg/14 lb 5 oz. |

Accessories

| | |
|-------------------------------------|---|
| EP Adapter | 1 |
| Cartridge mounting parts (KUT, KCT) | |
| Cartridge mounting screws | 6 |
| Cartridge mounting nuts | 2 |
| Cartridge mounting washers | 2 |
| Operating Instructions | 1 |

PC-135 Specifications (PL-300X KU)

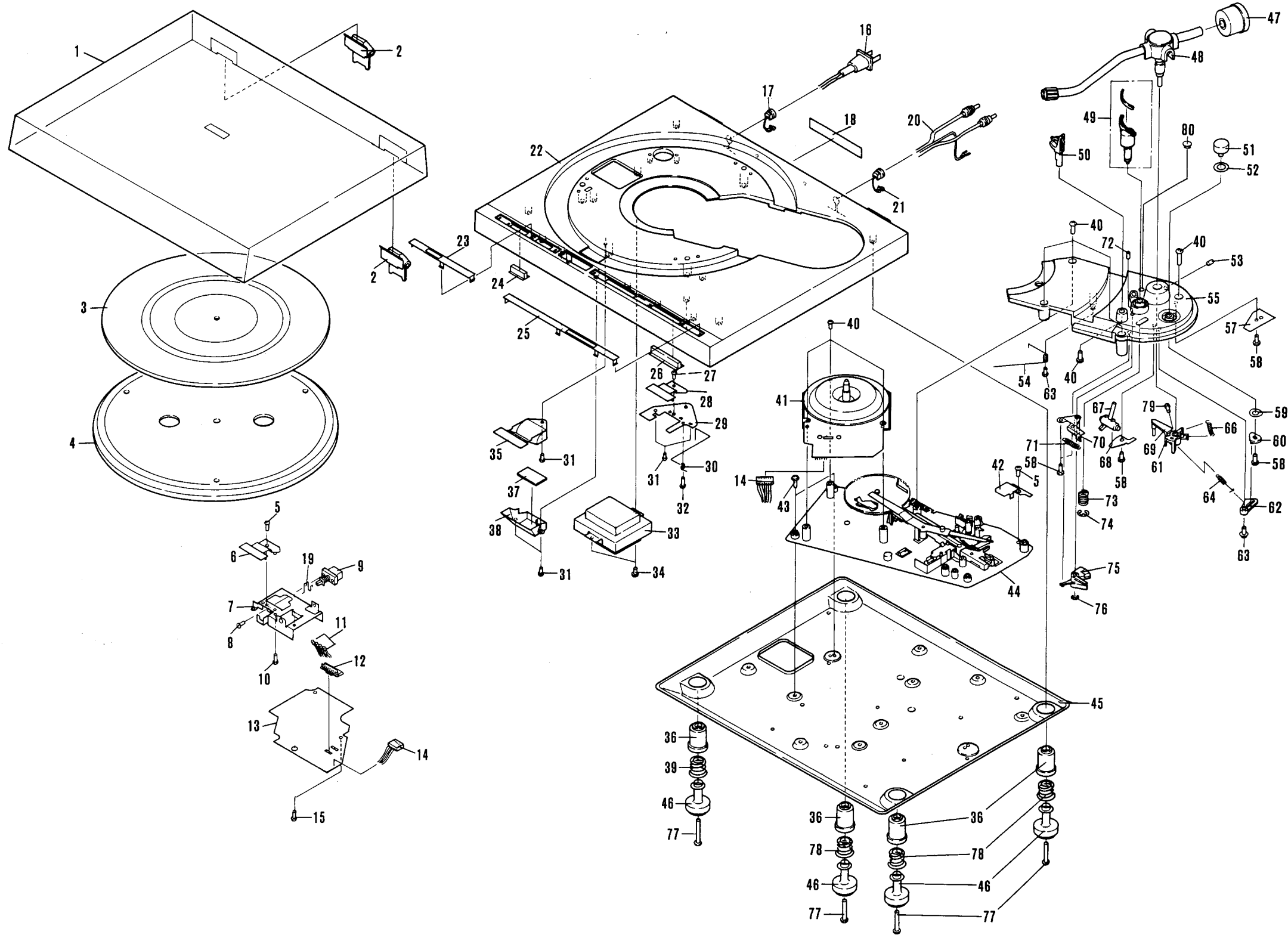
| | |
|--------------------|--|
| Type | Induced magnet type |
| Stylus | 0.5 mil diamond (PN-135) |
| Output Voltage | 3mV (1kHz, 50mm/s Peak velocity, LAT) |
| Tracking Force | 1.5g to 2.3g (proper 2g) |
| Frequency Response | 10 to 25,000Hz |

NOTE:

Specifications and design subject to possible modification without notice, due to improvements.

2. EXPLODED VIEWS

2.1 MAIN PANEL



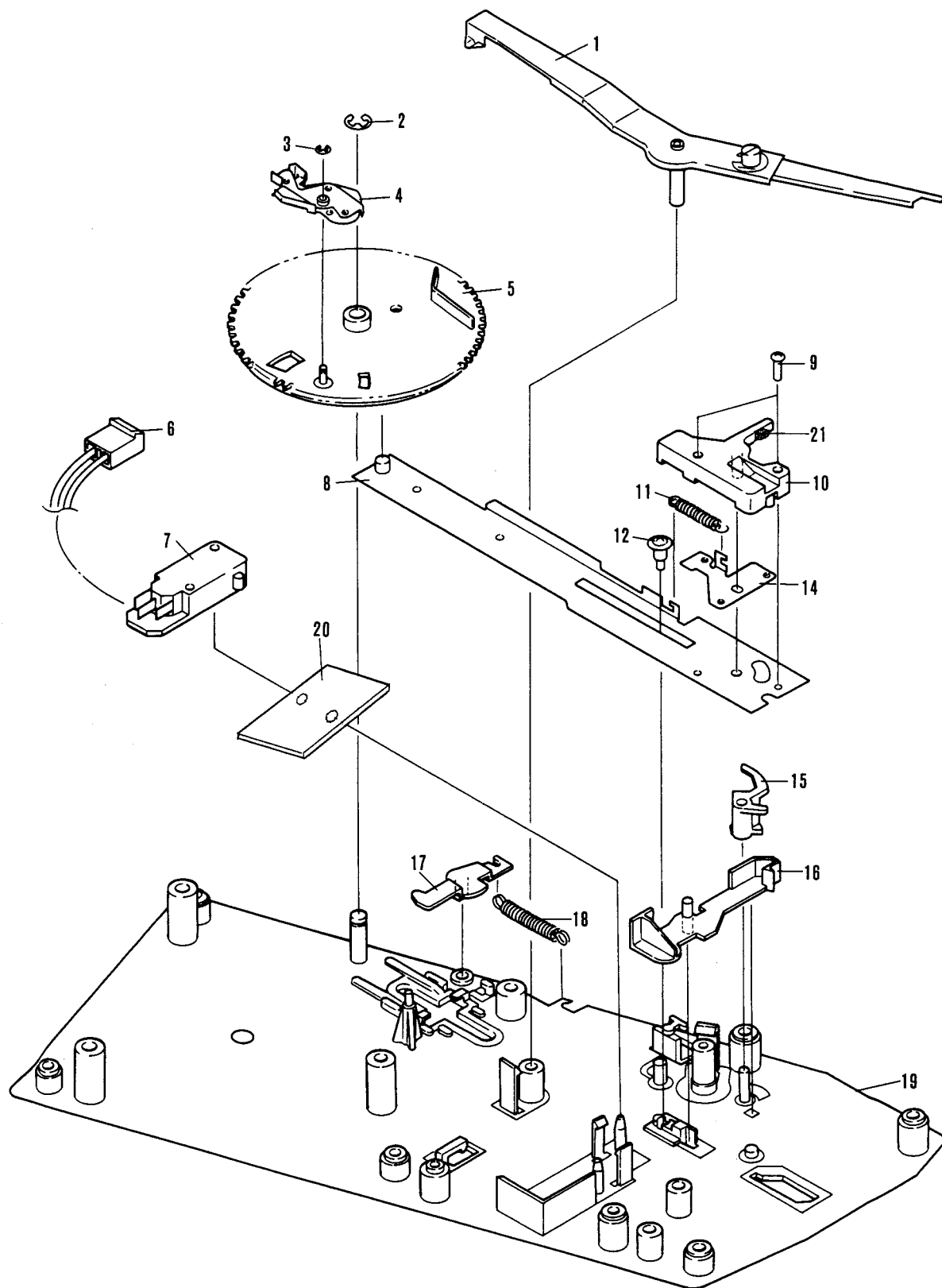
Parts List of Main Panel

NOTE:

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

| Key No. | Part No. | Description | Key No. | Part No. | Description |
|--------------|-------------------|------------------------|---------|-------------------|---|
| 1. | PNV-034 | Dust cover | 46. | PNX-062 | Foot case |
| 2. | PXB-155 | Hinge assembly | 47. | PXB-092 | Weight assembly |
| 3. | PEB-152 (KUT, KU) | Rubber mat assembly | 48. | PPD-591 (PL-300) | Arm assembly |
| | PEB-150 (KCT) | | | PPD-593 (PL-300X) | |
| 4. | PNR-115 | Turntable platter | 49. | PXB-107 | EV sheet assembly |
| 5. | | Deltite screw 3 x 8 | 50. | PXB-094 | Arm rest assembly |
| 6. | | Button guide C | 51. | PAC-045 (PL-300) | AS knob |
| 7. | | Angle | | PAC-041 (PL-300X) | |
| 8. | | Semex A screw 3 x 5 | 52. | PBF-005 | AS washer |
| 9. | PSG-020 | Push switch | 53. | | Hexagon socket headless set screw 4 x 7 |
| 10. | | Taptite P screw 3 x 8 | 54. | PXB-152 | Cut spring B assembly |
| 11. | BR5504S | LED | 55. | PNX-053 (PL-300) | Arm base |
| 12. | | LED base | | PNX-085 (PL-300X) | |
| Δ 13. | | Power supply assembly | 56. | | ----- |
| 14. | PDE-062 | Connector assembly | 57. | | OUTPUT terminal |
| 15. | | Taptite P screw 3 x 8 | 58. | | Taptite P screw 3 x 8 |
| Δ 16. | PDG-017 | AC power cord | 59. | PBE-012 | Washer |
| 17. | PEC-058 | Strain relief | 60. | PNX-054 | AS adjusting plate |
| 18. | | Label | 61. | PNX-061 | PU plate B |
| 19. | PBH-281 | Spring | 62. | PNX-055 | Lever |
| 20. | PDE-064 | OUTPUT cord | 63. | | Washer faced taptite P screw 3 x 10 |
| 21. | PEC-056 | Strain relief | 64. | PBH-236 | AS spring |
| 22. | PNX-114 (PL-300) | Panel | 65. | | ----- |
| | PNX-116 (PL-300X) | | 66. | PBH-244 | PU plate spring |
| 23. | PAM-062 (PL-300) | Name plate | 67. | PXT-382 | EV lever unit |
| | PAM-066 (PL-300X) | | 68. | PBK-042 | EV plate spring A |
| 24. | PAC-043 | Push button | 69. | PNX-060 | PU plate A |
| 25. | PAM-060 (PL-300) | Name plate | 70. | PXT-385 | EV plate spring B unit |
| | PAM-064 (PL-300X) | | 71. | PBH-238 | EV cam spring |
| 26. | PAC-044 | Button | 72. | | Hexagon socket headless set screw 3 x 12 |
| 27. | | Deltite screw 3 x 8 | 73. | PBH-237 | EV spring |
| 28. | PNX-052 | Button guide A | 74. | | E type washer 7 |
| 29. | | Button base | 75. | PNX-059 | EV cam |
| 30. | PXB-151 | Cut spring A assembly | 76. | | E type washer 3 |
| 31. | | Taptite P screw 3 x 8 | 77. | PBA-099 | Screw |
| 32. | PBA-086 | Screw | 78. | PBH-241 | Foot spring B |
| Δ 33. | PTT-078 (KUT, KU) | Power transformer | 79. | | Pan head screw 4 x 8 |
| | PTT-091 (KCT) | | 80. | PEB-114 (KUT, KU) | Rubber bush |
| 34. | | Taptite P screw 4 x 10 | | | |
| 35. | PNX-051 | Lens | | | |
| 36. | PEB-163 | Rubber cushion | | | |
| 37. | | Mirror | | | |
| 38. | | Lens holder | | | |
| 39. | PBH-240 | Foot spring | | | |
| 40. | PBA-108 | Screw | | | |
| 41. | PXM-075 | Motor | | | |
| 42. | | Protector | | | |
| 43. | PBA-109 | Screw | | | |
| Δ 44. | | Subpanel assembly | | | |
| 45. | | Base | | | |

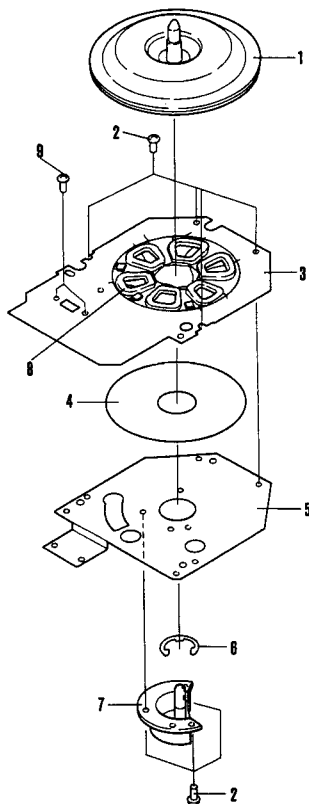
2.2 SUB PANEL



Parts List of Sub Panel

| Key No. | Part No. | Description | Key No. | Part No. | Description |
|---------|----------|-------------------------|---------|----------|----------------|
| 1. | PXT-355 | Detector lever unit | 11. | PBH-224 | Spring |
| 2. | | E type washer 4 | 12. | PBA-103 | Screw |
| 3. | | E type washer 1.5 | 13. | | |
| 4. | PYY-058 | Return signal unit | 14. | PNC-126 | START plate |
| 5. | PNX-036 | Cam | 15. | PNX-031 | Switch plate |
| ⚠ 6. | PDE-070 | Connector assembly | 16. | PNX-030 | Switch lever |
| ⚠ 7. | PSF-006 | Microswitch | 17. | PNX-035 | Plate |
| 8. | | Plate | 18. | PBH-225 | Spring |
| 9. | | Pan head screw 2.6 x 10 | 19. | | Sub panel unit |
| 10. | PNX-033 | EV cam | 20. | PEC-057 | Insulator |
| | | | 21. | PEC-065 | EV cam cushion |

2.3 D.D. MOTOR



| Key No. | Part No. | Description |
|---------|----------|--------------------|
| 1. | | Rotor unit |
| 2. | | Taptite screw 3x5 |
| 3. | | Control assembly |
| 4. | | Insulator |
| 5. | | Base unit |
| 6. | | EW12 |
| 7. | | Shaft holder |
| 8. | | Coil |
| 9. | | Taptite screw 3x12 |

3. SCHEMATIC DIAGRAM AND PARTS LIST

NOTE:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω — 56 × 10¹ — 561 RD¼PS 561 J
 47kΩ — 47 × 10³ — 473 RD¼PS 473 J
 0.5Ω — 0R5 RN2H 0R5 K
 1Ω — 010 RS1P 010 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10¹ 5621 RN¼SR 5621 F

- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Parts List of D.D. motor (PXM-075)

CAPACITORS

| Part No. | Symbol & Description |
|----------------|----------------------|
| CEA 101M 6.3NP | C1 |
| CKDYF 403Z 50 | C2 |
| CKDYB 681K 50 | C3 |
| CQMA 104J 50 | C4 |
| CSZA R47K 35 | C5 |
| CKDYF 103Z 50 | C6, C13, C16—C18 |
| CQMA 104K 50 | C7, C20 |
| CEA 010P 50 | C8 |
| CEA 100P 16 | C9 |
| CEA 471P 25 | C10—C12 |
| CCDCH 330J 50 | C14 |
| CCDCH 560J 50 | C15 |
| CEA 100P 25 | C19 |

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

RESISTORS

| Part No. | Symbol & Description |
|------------|----------------------|
| RD¼PS □□□J | R1—R6, R9—R15 |
| RD¼PS □□□J | R7, R8 |
| PCP-040 | VR1 (10k-B) |
| PCP-039 | VR2 (6.8k-B) |

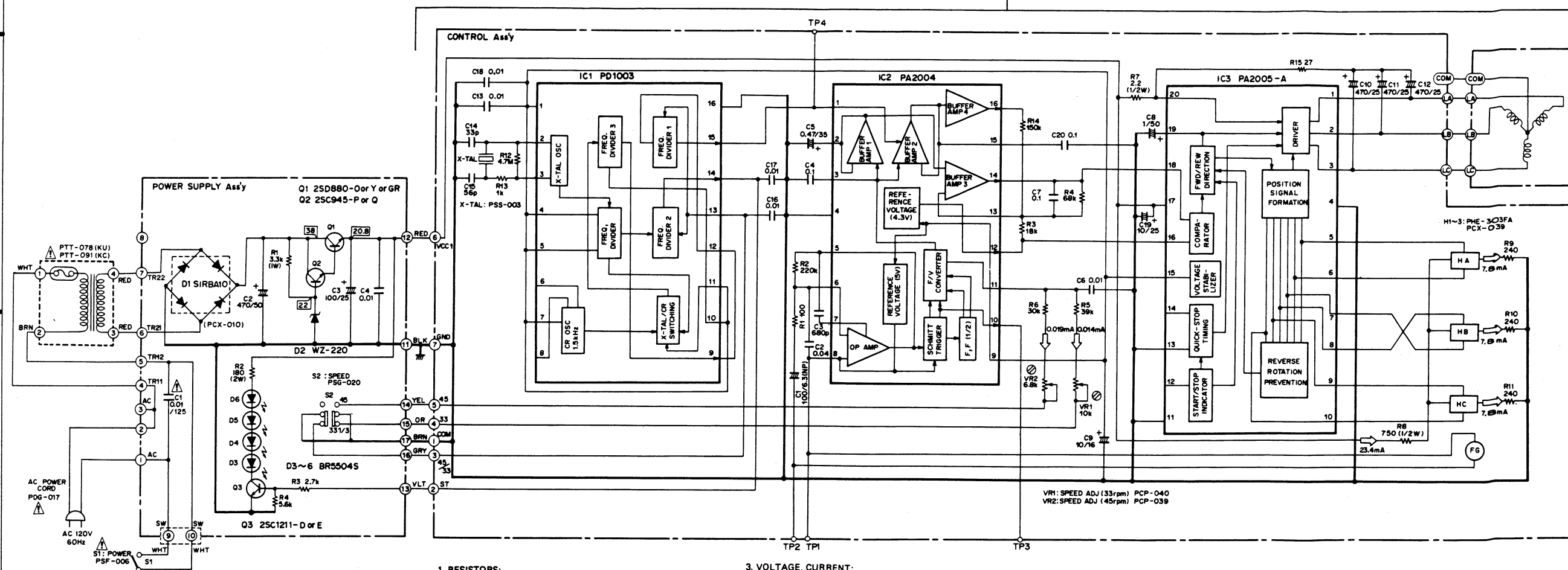
SEMICONDUCTORS AND OTHERS

| Part No. | Symbol & Description |
|-----------|----------------------|
| PD1003 | IC1 |
| PA2004 | IC2 |
| PA2005A | IC3 |
| PHE-303FA | H1—H3 Hall element |
| PSS-003 | Crystal |

Parts List of Power Supply Assembly

| Part No. | Symbol & Description |
|------------------|----------------------|
| 2SD880 | Q1 |
| 2SC945 | Q2 |
| 2SC1211 | Q3 |
| PCX-010 | D1 |
| WZ-220 | D2 |
| BR5504S | D3—D6 |
| CKDYF 103Z 50 | C4 |
| CEA 471M 50L | C2 |
| CEA 101M 25L | C3 |
| Δ PCL-036 | C1 |
| RD¼PS 272J | R3 |
| RS2PF 181J | R2 |
| RS1PF 332J | R1 |
| RD¼PS 562J | R4 |
| PSG-020 | S2 Speed selector |
| PDE-062 | Connector assembly |
| PNX-015 | Insulator |
| PBH-261 | Push button spring |

D.D. MOTOR
PXM-075



1. RESISTORS:
Indicated in Ω , $\frac{1}{2}W$, $\pm 5\%$ tolerance unless otherwise noted k : k Ω , M : M Ω , (F) : $\pm 1\%$, (G) : $\pm 2\%$, (K) : $\pm 10\%$ tolerance.
2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

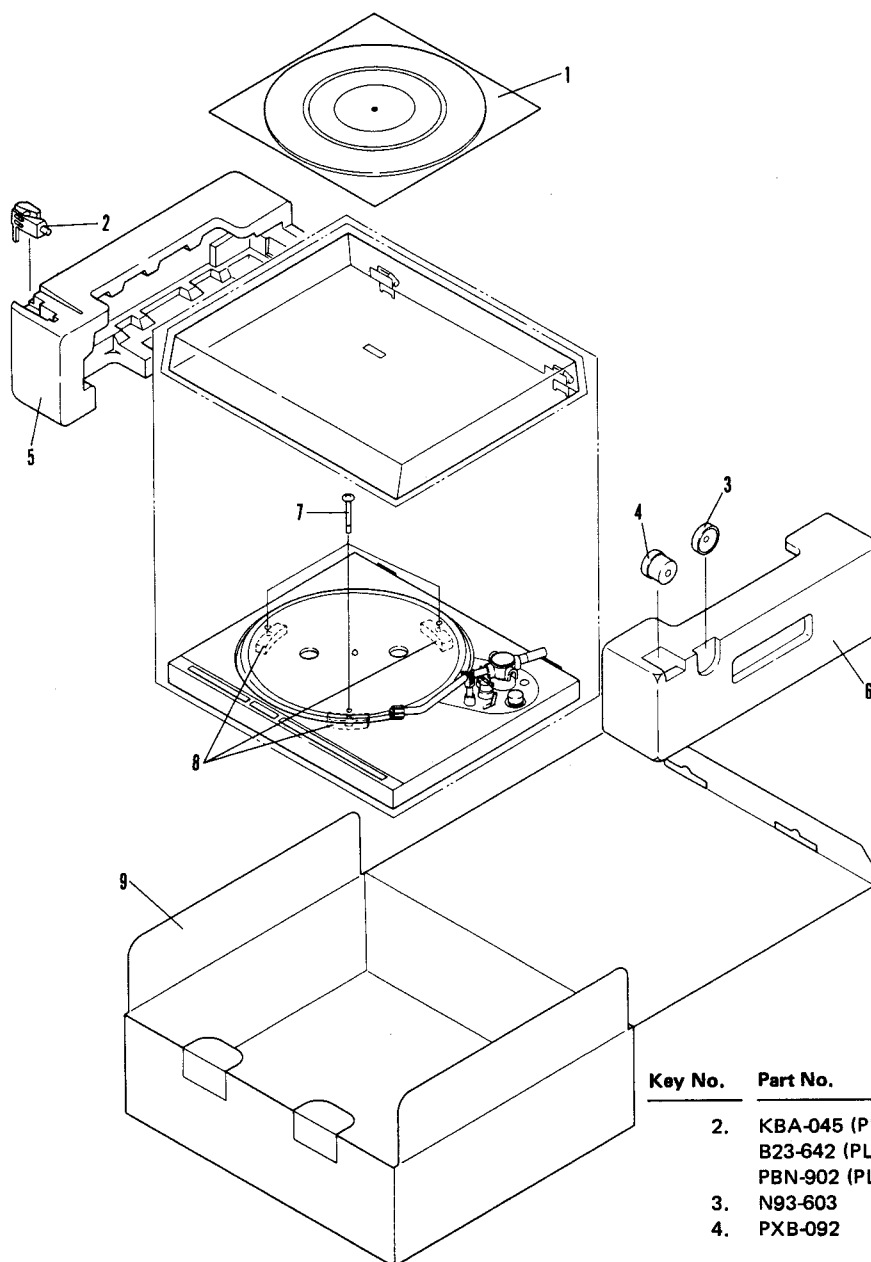
3. VOLTAGE, CURRENT:
□ : DC voltage (V) at no input signal
◁ mA : DC current at no input signal

4. OTHERS:
⊗ : Adjusting point.
The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

- SWITCHES:
S1: POWER ON — OFF
S2: SPEED 33 1/3rpm — 45rpm
The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. PACKING



Parts List

| Key No. | Part No. | Description |
|---------|--|--|
| 1. | PEB-150 (KCT) PEB-152 (KUT, KU) | Rubber mat assembly |
| 2. | PXA-792 (PL-300) PXA-791 (PL-300X) PXT-941 (PL-300X) | Headshell assembly Cartridge assembly |

| Key No. | Part No. | Description |
|---------|--|---|
| 2. | KBA-045 (PL-300X) B23-642 (PL-300X) PBN-902 (PL-300X) | Cartridge mounting screw Cartridge mounting washer Cartridge mounting nut |
| 3. | N93-603 | 45 adaptor |
| 4. | PXB-092 | Weight assembly |
| 5. | PHA-107 | Side protector L |
| 6. | PHA-108 | Side protector R |
| 7. | PBA-100 | Screw |
| 8. | PNX-064 | Turntable protector |
| 9. | PHG-391 (PL-300/KCT) PHG-390 (PL-300/KUT) PHG-392 (PL-300X) PRB-144 (PL-300) PRB-145 (PL-300X) PXB-125 (PL-300) | Packing case Operating instructions Cartridge mounting screw assembly |
| | H56-603 | Vinyl bag |